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TITLE: MANAGING DEVICE/METHOD FOR PRINTER

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ABSTRACT:

PROBLEM TO BE SOLVED: To facilitate an operation for processing one printing job with plural printers in parallel.

SOLUTION: The list 32 of plural printers 3-1, 3-2 and 3-n, which are connected to a network is displayed on the display unit of a personal computer. An operator selects the desired printer as a printer group, gives a printer group name to it and registers it. The processing capability of the registered printer group is displayed on a column 33. The registered printer group can similarly be treated as the printer of a single body.

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DETAILED DESCRIPTION

[0001]

[Field of the Invention] This invention relates to the information processor which manages two or more printers, its approach, a printer system, and its control approach.

[0002]

[Description of the Prior Art] In the printer system which shares two or more printers, in case an output destination change is specified, the operation situation and throughput of a printer are shown to a user and it thinks choosing an output destination change if needed of the user. For example, it is choosing the printer from which it works normally and an waiting printer's is chosen and which can carry out [which chooses the high-speed printer from which the printer which can carry out a color output is chosen] double-sided printing etc.

[0003] Moreover, two or more printers can be made into an output destination change, and a print speed can be raised by making print actuation perform in parallel.

[0004]

[Problem(s) to be Solved by the Invention] However, although two or more printers according to individual must be specified in order to specify two or more printers as an output destination change, it will be necessary to acquire the information on the operation situation and throughput of each printer according to an individual, the user itself will need to total, and it will take time and effort.

[0005] Moreover, one job will have to be divided into two or more jobs, a setup will have to be redone, and actuation will become complicated.

[0006] Moreover, also about the job under output, it is necessary to acquire the information on the advance situation of each printer according to an individual, the user itself needs to total, and a user requires time and effort, in order to know the advance situation of the job currently outputted to two or more output destination changes.

[0007] Moreover, when an output destination change carries out a multi-statement, the user itself needs to judge whether there is any capacity that the contents of the output setup can be performed about the printers of each directed as an output destination change, and it takes time and effort.

[0008] It aims at offering the information processor and printer system for choosing the optimal printer which a user desires by this invention's solving the above-mentioned trouble, totaling automatically the synthetic operation situation of two or more output destination changes, a throughput, and the advance situation of a job, and showing a user.

[0009]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, this invention two or more usable printers with the throughput The 1st display step displayed as selections, and the registration step into which two or more printers chosen by the operator are made to register as one printer group, The 2nd display step on which each throughput of two or more printers by which selection was made [above-mentioned] is displayed as a throughput as one printer group, It has the 3rd display step on which the printer group registered at two or more printers and above-mentioned registration steps on the occasion of print actuation activation is displayed as a printer for selection.

[0010]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is

explained with reference to a drawing.

[0011] Drawing 1 is the conceptual diagram of the printer system which can apply this invention. 1 is a personal computer (PC) and creates data 1a outputted to a printer with various applications which operate on PC1. Printer driver 1b which 1b is a printer driver and operates on PC1. The inside of two or more printers 3-1 connected by the network circuit - printer 3-n, As opposed to the printer of the arbitration which the user specified by printer driver 1b perform the output request of data 1a, or Management of the printer connected through the network circuit, the output directions to a printer, and information on a printer are acquired, or the arbitration of two or more printers connected by the network circuit combines, and it has the function manager which registers ** as a printer group beforehand and manages it.

[0012] 2 is a scanner which reads the image of manuscript 2a, and has the control unit with the key which performs image memory 2bs, such as a hard disk, and various setup, or a display. 2c is the same printer driver as 1b.

[0013] CPU by which drawing 2 is the block diagram showing the outline configuration of PC1, and 11 controls the whole actuation, RAM which 12 memorizes data or functions as a work area of CPU, ROM 13 remembered a control program and various data to be, and 14 memorize data, or The hard disk with which an application program and various driver programs are memorized (HDD), The indicator with which a keyboard for an operator to input directions and data, as for an interface (I/F) for 15 to connect with LAN and 16 and 17 display a keyboard interface, and 18 displays various data and an actuation screen, and 19 are display interfaces.

[0014] Drawing 3 is a dialog for registering a printer group, and is displayed on the drop 18 of PC1.

[0015] A user inputs the printer group name of arbitration into the column 31 of a "printer group name" from a keyboard 16. In the example of drawing 3, "the printer group A" is inputted and this printer group is called "the printer group A" below.

[0016] A list indication of the printer connected by the network circuit is given at the column 32 of a "printer group." An operator chooses by the keyboard 16 by making two or more desired printers into a printer group out of the displayed list. The display items of a column 32 are the name of a printer, and a throughput. In drawing 3, they are the maximum print speeds for 1 minute (a part for part 20-sheet/for 50-sheet/etc.), the colors (a color, black and white, etc.) which can be printed, double-sided printing capacity (both sides, one side), etc. as a throughput. Although how printer driver 1b communicates with each printer, and it acquires about the name of a printer and the information on a throughput, or a user sets up in another dialog of printer driver 1b can be considered, detailed explanation is omitted here. In the example of drawing 3, the printer 3-1 and the printer 3-2 are chosen as a printer which constitutes "the printer group A."

[0017] The column 33 of "a printer group's throughput" expresses the synthetic throughput of "the printer group A", and serves as the maximum print speed (a part for 70-sheet/), a color (black and white) which can be printed, and double-sided printing (both sides) here. In addition, the maximum print speed is shown by the sum of the maximum print speed of each printer which constitutes a printer group among throughputs, and only the function in which the other throughput can be processed in common by all the printers that constitute a printer group is displayed. If it says in the example of drawing 3, since the maximum print speed of a printer 3-1 will be a part for

50-sheet/and the maximum print speed of a printer 3-2 will be a part for 20-sheet/, the synthetic maximum print speed of "the printer group A" becomes a part for 70-sheet/of both sum. Namely, it can treat now as a high speed printer to one set seemingly.

Although a printer 3-1 is a color printer for example, and a color and printing of both black and white are possible about throughputs other than the maximum print speed, since a printer 3-2 is monochrome printer, only black-and-white printing can do it, therefore the print color which can be processed as "a printer group A" serves as only black and white which can be printed in a printer 3-1 and printer 3-2 both. Moreover, since both double-sided printings are possible, processing of both sides of a printer 3-1 and a printer 3-2 is attained as "a printer group A."

[0018] When printing by a user specifying the printer group who is going to register by displaying "a printer group's throughput" here, it can know easily what kind of throughput the printer group who specified has.

[0019] A part cannot be outputted [the column 34 "when an output of some printers in a group is improper"] by the case where an output in an error is impossible, or some printers, without the function for which a user asks among the printers which constitute a group (although the user asked for double-sided printing). In that there is no perfecting machine ability in some printers etc., it chooses by the keyboard 16 whether an output is made improper as a group, or it outputs only to the printer in which an output is possible. That is, being improper has become "Carrying out the output of a group" at an alternative of "outputting only to a printer with a good output", and both are rebellion. "The output of a group is made improper" is chosen in the example of drawing 3 .

[0020] Drawing 4 is a dialog for choosing the printer of an output destination change, and is displayed on the drop 18 of PC1.

[0021] The column 41 of an "output destination change" is a list of printers in which a multiple selection is possible, and a list indication of the printer group who registered on the printer of the simple substance connected by the network circuit and the screen of drawing 3 is given. An operator chooses the printer, the printer group, or each combination of a simple substance by the keyboard 16. When two or more [here] simple substance printers and printer groups are chosen, the printer which constitutes a printer group is specified as an output destination change. The display item of a list is in the name of a printer, a throughput, and an operation situation about the printer of a simple substance. The operation situation of the printer of a simple substance is improper for that an output is possible or an output. A printer group's display item is in the throughput of a printer group name and a printer group, and a printer group's operation situation. The contents as drawing 3 explained the throughput of a printer group name and a printer group are displayed. If an output of all the printers that constitute a group is good, if all output good cannot be outputted, they will display that an output is impossible on a printer group's operation situation. When an output of some printers which constitute a group is improper, if this setup is "making the output of a group improper" and it is output improper and "outputting only to a printer with a good output", it will be displayed based on a setup when ["when / for which an output of some printers in a group is improper /"] drawing 3 explains that an output is possible.

[0022] The column 42 of "the comprehensive throughput of the selected printer and an operation situation" displays the synthetic throughput and operation situation of each printer which were chosen as an output destination change. The maximum print speed is

shown by the sum of the maximum print speed of only a printer with an output good among each printer chosen as an output destination change among throughputs, and only the function in which the other throughput can be processed in common by the printer with an output good among each printer chosen as an output destination change is displayed. If an output of all the printers chosen as the operation situation as an output destination change is good, an output good, If all output is improper, when an output of the printer of display sushi part is as improper as an output being impossible, Based on a setup of the column 43 when [on the same dialog / "when an output of a part of those of the selected printer is improper"], if this setup is "not outputting", in the case of "outputting only to a printer with a good output", output improper and this setup will make it possible [an output]. When an output of some of these printers of the printer chosen as an output destination change when "outputting only to a printer with a good output" was rebellion, saying "It does not output" and this setup was "not outputting" is improper, printer driver 1b does not perform an output request to a printer, but if this setup is "outputting only to a printer with a good output", printer driver 1b will perform an output request to a printer with a good output.

[0023] Drawing 5 is a dialog which displays the advance situation of a print job, and a result, and is displayed on the control unit 18 of PC1.

[0024] If a user specifies an output destination change in the printer selection dialog of drawing 4 , specifies output number of copies of data 1a with PC1 and starts print activation, printer driver 1b will distribute output number of copies specified as each specified printer, will advance a print request, and will manage it as one print job. The advance situation of the one print job and a result are displayed on a print situation dialog.

[0025] The time (drawing 5 "98.10.15 10:20:35") and the pagination (drawing 5 "ten manuscripts") of data 1a which started print activation, and output number of copies (drawing 5 "output 7 section") specified by a user are displayed on the column 51 of a "print job", and it helps for a user to specify a print job.

[0026] The output situation of each printer of an output destination change is shown in the column 52 of "the output situation of each printer" a list table. Number of copies [finishing / a printer name (drawing 5 "printer 3-1") and an output / the display item of a list] ("2 section" of the part currently displayed as the 2 sections / 5 section in drawing 5), Output number of copies required of the printer ("5 section" of the part currently displayed as the 2 sections / 5 section in drawing 5), They are number of sheets [finishing / an output] ("25 sheets" of the part currently displayed as 25 sheets / 50 sheets in drawing 5), and the output number of sheets ("50 sheets" of the part currently displayed as 25 sheets / 50 sheets in drawing 5) required of the printer.

[0027] An output situation with the column 53 of "the comprehensive output situation of the selected printer" synthetic as a print job is displayed. The sum of number of copies [finishing / an output by each printer / a display item] ("3 section" of the part currently displayed as the 3 sections / 7 section in drawing 5), Output number of copies specified by a user ("7 section" of the part currently displayed as the 3 sections / 7 section in drawing 5), It is the product ("70 sheets" of the part currently displayed as 35 sheets / 70 sheets in drawing 5) of output number of copies and the pagination of data 1a which the sum ("35 sheets" of the part currently displayed as 35 sheets / 70 sheets in drawing 5) of number of sheets [finishing / an output] and a user specified by each printer.

[0028] Distribution of a print job is performed so that the time amount which the whole print job takes based on selected output number of copies of the capacity (mainly print speed) of each printer and a print job may become the shortest. That is, number of copies can distribute to each printer that the ratio of the print speed of each printer is also. In addition, based on this double-sided print-speed information, a job can distribute at the time of double-sided printing by setting the information on the print speed at the time of the double-sided output of each printer as PC1.

[0029] Although the operation gestalt mentioned above explained the case where a print job was outputted from PC1, it can be adapted also in case the image data scanned with the equipments (a copying machine, fax, etc.) with which the user interface, a scanner and a scanner equipped with the printer driver, and the printer were united is outputted to two or more printers.

[0030] Next, the example at the time of outputting the image data scanned with the scanner equipped with the user interface and the printer driver to two or more printers is explained.

[0031] Manuscript 2a is scanned with the scanner 2 of drawing 1 , and data 2b outputted to a printer is created. Printer driver 2c has the same function as printer driver 1b. Scan of manuscript 2a and actuation of printer driver 2c are performed by 2d of control units of a scanner. Printer driver 2c which operates on a scanner 2 performs the output request of data 2b to the printer of the arbitration which the user specified by printer driver 2c among two or more printers 3-1 connected by the network circuit - printer 3-n.

[0032] in addition, the screen displayed on the function of driver 2c and 2d of control units of a scanner 2 is equivalent to the screen displayed on the control unit 18 boiled PC1.

[0033]

[Effect of the Invention] According to this invention, two or more desired printers are registered as one printer group as explained above. By being able to treat like the printer of a simple substance, totaling automatically further a printer group's synthetic throughput which the user chose as an output destination change, an operation situation, and the advance situation of a job, and showing a user The advance situation of the print job which could choose easily the output destination change for which a user asks, and was performed can be grasped easily.

[0034] Furthermore, actuation for operating two or more printers in parallel, and processing a print job can be performed easily.

CLAIMS

[Claim(s)]

[Claim 1] The 1st display step on which two or more usable printers are displayed as selections with the throughput, The registration step into which two or more printers chosen by the operator are made to register as one printer group, The 2nd display step on which each throughput of two or more printers by which selection was made [above-mentioned] is displayed as a throughput as one printer group, The management method of the printer characterized by having the 3rd display step on which the printer group registered at two or more printers and above-mentioned registration steps on the occasion

of print actuation activation is displayed as a printer for selection.

[Claim 2] The management method of the printer according to claim 1 characterized by displaying the sum of the print speed of each selected printer as a printer group's print speed at the display step of the above 2nd.

[Claim 3] The management method of the printer according to claim 1 characterized by displaying the function which can be performed in common to each selected printer as a printer group's throughput at the display step of the above 2nd.

[Claim 4] The management method of the printer according to claim 1 characterized by displaying the throughput of each printer and a printer group at the display step of the above 3rd.

[Claim 5] The management method of the printer according to claim 1 characterized by making a printer group's name register and displaying a printer group's name at the display step of the above 3rd at the above-mentioned registration step.

[Claim 6] The management method of the printer according to claim 1 characterized by making management in case the function in which a print job cannot be performed is further included in two or more selected printers at the above-mentioned registration step register.

[Claim 7] The management method of the printer according to claim 1 characterized by having the execute step which makes each printer of a printer group distribute and perform a print job when a printer group is chosen at the time of a print job.

[Claim 8] The management method of the printer according to claim 7 characterized by having the 4th display step on which the operation situation of each printer of a printer group is displayed at the time of print job activation.

[Claim 9] The 1st display-control means on which two or more usable printers are displayed as selections with the throughput, A registration means to choose two or more desired printers as one printer group, and to register them out of two or more printers displayed by the display-control means of the above 1st, The 2nd display-control means on which each throughput of two or more printers registered by the above-mentioned registration means is displayed as a throughput as one printer group, Management equipment of the printer characterized by having the 3rd display-control means on which the printer group registered at two or more printers and above-mentioned registration steps on the occasion of print actuation activation is displayed as a printer for selection.

[Claim 10] The display-control means of the above 2nd is management equipment of the printer according to claim 9 characterized by displaying the sum of the print speed of each printer by which selective registry is carried out as a printer group's print speed.

[Claim 11] The display-control means of the above 2nd is management equipment of the printer according to claim 9 characterized by displaying the function which can be performed in common on each printer by which selective registry is carried out as a printer group's throughput.

[Claim 12] The display-control means of the above 3rd is management equipment of the printer according to claim 9 characterized by displaying the throughput of each printer and a printer group.

[Claim 13] It is management equipment of the printer according to claim 9 which the above-mentioned registration means makes register a printer group's name, and is characterized by the display-control means of the above 3rd displaying a printer group's name.

[Claim 14] The above-mentioned registration means is management equipment of the printer according to claim 9 characterized by making management in case the function in which a print job cannot be performed is further included in two or more printers by which selective registry is carried out register.

[Claim 15] Management equipment of the printer according to claim 9 characterized by having an activation means to make each printer of a printer group distribute and perform a print job when a printer group is chosen at the time of a print job.

[Claim 16] Management equipment of the printer according to claim 15 characterized by having the 4th display-control means on which the operation situation of each printer of a printer group is displayed at the time of print job activation.